

Remarks

By this amendment:

1. The Summary of the Invention is amended in view of claim 1 error corrections under **35 USC § 112**.
2. Claim 1 is amended to overcome the **35 USC § 112** rejection there of.
4. Reasons are given for allowance of rejected claims 1-6 under **35 USC § 102** and **103**.

GENERAL DISCUSSION

An important feature of applicant's invention is a synchronizer having an integrated self-energizing, pre-energizing assembly and blocker assembly such as assembly (44) in combination with a detent mechanism (70). The detent mechanism (70) ensures proper engaging alignment of non-self-energizing surfaces (46c, 48c, 54e, 56e) when a shift sleeve (36) is in the so-called neutral range and during initial movement of the shift sleeve from neutral. Claim 1 as amended in the communication filed 16 March 2006 is believed to patently define over Jackson (US2003/0006116 A1) under **35 USC § 102** and Claim 1 as amended in the communication filed 16 March 2006 is believed to patently define over Jackson (US2003/0006116 A1) in view of US Patent 5,425,437 to Nellums. Neither of these references discloses nor suggests a need for applicant's detent mechanism (70) in a synchronizer having an integrated self-energizing, pre-energizing assembly and blocker assembly such as assembly (44). The Jackson publication discloses a synchronizer having an integrated self-energizing, pre-energizing assembly and blocker assembly such as assembly (44) and teaches that the pre-energizing part of assembly (44) is sufficient to maintain his shift sleeve 36 in the neutral for proper operation of the synchronizer. As stated in the rejection, the Jackson publication discloses "the non-self-energizing surfaces between self-energizing surfaces 54a, 54b and 56a, 56b". These non-self-energizing surfaces are not discussed in detail in the Jackson publication since their function is well known in the prior art. For example, this function is discussed in EP-A-0663 541 which is referenced in the Jackson publication and which is based on US Patent 5,544,727. In brief, these non-self-energizing surfaces must be aligned when the synchronizer is in the neutral position prevent unwanted activation of the self-energizing surfaces due, for example, to viscous shear of oil between the friction clutch surfaces of the synchronizer. Applicant's discovered that the non-self-energizing surfaces can move out of alignment with each other and allow unwanted activation of the self-energizing surfaces when only the pre-energizing assembly in the Jackson publication is used to establish the neutral position of the shift

sleeve therein. In brief, Nellums does not disclose or suggest an integrated self-energizing, pre-energizing assembly, and blocker assembly such as assembly (44) in combination with a detent mechanism (70). Further, Nellums also does not disclose a detent having the structural requirements in claim 1. Looking now in detail at the rejections:

35 USC § 102 Rejection

The rejection states that "*Claims 1-6 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Jackson (US 2003/0006116 A1). The Jackson publication appears to disclose substantially the identical structure as disclosed and claimed in the instant application, differing only in that the non-self-energizing surfaces between self-energizing surfaces 54a, 54b and 56a, 56b are not designated by a reference number.*"

This rejection is respectfully traversed. The Jackson publication discloses an integrated self-energizing, pre-energizing assembly and blocker assembly such as assembly (44) but fails to disclose or suggest a detent mechanism (70). As mentioned above, the Jackson publication teaches that only the pre-energizing part of assembly (44) is needed to maintain his shift sleeve 36 in the neutral for proper operation of the synchronizer. The pre-energizing assembly in FIG 6 of the Jackson publication is only an alternative embodiment of the pre-energizing assembly in FIG's 1-5 thereof. Further, detents in all of the FIG's in the Jackson publication are not formed in a radially inwardly facing surface of the internal splines as required in claim 1. Detents in all of the FIG's in the Jackson publication are formed in self-energizing members (50/50') that have limited rotation relative to the shift sleeve and the internal splines thereon. Accordingly, claim 1 as amended in the communication filed 16 March 2006 is not anticipated under 35 U.S.C. 102(b) by the synchronizer in the Jackson publication which does not disclose or suggest any need for the synchronizer therein to have anything other than the pre-energizing assembly to position the shift sleeve in the neutral position. Further, the Jackson publication does not disclose any type of detent having the structural requirements of claim 1.

Claims 2 and 3 are believed to be allowable since they depend from allowable claim 1 and since they add features of applicant's detent means that are not disclosed or suggested by Nellums.

Claim 4 depends from claim 1 and adds structure to the integrated self-energizing, pre-energizing assembly, and blocker assembly (44) in combination with the detent assembly of claim 1.

Claims 5 and 6, which are patterned after claims 2 and 3, are believed to be allowable since they depend from allowable claim 4 and since they add features of applicant's detent means that are not disclosed or suggested by Nellums.

35 USC § 103 Rejection

The subject matter of the various claims in this application was commonly owned at the time of any inventions covered herein.

The rejection states that "*Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US 2003/0006116 A1) in view of Nellums ('437). As noted above, Jackson is seen to disclose all the subject matter claimed here; however, even if Jackson were considered not to disclose non-self-energizing surfaces since the surfaces between self-energizing surfaces 54a, 54b and 56a, 56b are not designated by a reference number, it would have been obvious to provide non-self-energizing surfaces at the location between the self-energizing surfaces as taught by Nellums. Nellums provides non-self-energizing surfaces at 70c, 72c for the purpose of preventing unwanted activation of the self-energizing ramp surfaces. It would have been obvious to carry this teaching to the Jackson device.*"

This rejection is respectfully traversed. The Jackson publication teaches that only the pre-energizing part of assembly (44) is needed to maintain his shift sleeve 36 in the neutral for proper operation of the synchronizer. Accordingly, one skilled in this would have no reason to add a detent such as the detent 63a in Nellums to the synchronizer in the Jackson publication. Further, the Nellums detent 63a is not formed in a radially inwardly facing surface of the internal splines as required in claim 1. Detent 63a is formed in a torque ring 63 that has limited rotation relative to the shift sleeve and the internal splines. Accordingly, claim 1 as amended in the communication filed 16 March 2006 is believed to be patentable over the Jackson publication in view Nellums since it is believed to be unobvious to combine these references and since they do not have important structural as required in claim 1.

Claims 2 and 3 are believed to be allowable since they depend from allowable claim 1 and since they add features of applicant's detent means that are not disclosed or suggested by Nellums.

Claim 4 depends from claim 1 and adds structure to the integrated self-energizing, pre-energizing assembly, and blocker assembly (44) in combination with the detent assembly of claim 1.

Claims 5 and 6, which are patterned after claims 2 and 3, are believed to be allowable since they depend from allowable claim 4 and since they add features of applicant's detent means that are not disclosed or suggested by Nellums.

In view of the above, this application and claims 1-6 therein are believed to be allowable.

The Commissioner is hereby authorized to charge any fees, which may be required or credit any overpayment to Account NO. 05-0275.

Respectfully submitted,

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Phone: (865) 458-1107
FAX: (775) 254-0089
Internet: PRulon@chartertn.net

Paul S Rulon

Paul S. Rulon
Registration No. 26,027
Eaton Corporation
Eaton Center
1111 Superior Avenue, Cleveland, OH 44114